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Dated: May 11, 2010
Electronic Signature for Arnold I. Radv: /Arnold I. Radv/

Docket No: BAYERC 3.0-001 RE
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Reissue of: U.S. Pat.5,599,804
In re Patent Application of:
Laurence C. Mudge.

Application No.: 10/849,509

Group Art Unit: 1616

Filed: May 19, 2004

Examiner: Alton Pryor

For: FUNGICIDAL COMPOSITIONS FOR THE
ENHANCEMENT OF TURF QUALITY

APPLICANT'S SECOND AMENDED APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant files this Second Amended Appeal Brief to include an additional discussion of examples in the specification, which has been included at page 12. The Amended Appeal Brief was filed in response to the "Notification of Non-Compliant Appeal Brief" mailed November 18, 2009. This Amended Appeal Brief differs from the original Appeal Brief filed on October 27, 2009, by changes made to this first paragraph, to Parts II and V and Appendix C, and to referenced page numbers. Part V and Appendix C are amended to disclose a recently filed litigation involving the Mudge '804 Patent, which was disclosed in a "Notice of Related Litigation" filed by Appellant in the PTO on November 24, 2009. This Amended Appeal Brief is an appeal from

the final rejection mailed July 8, 2009 ("OA"). A "Notice of Appeal" was timely filed on October 7, 2009. A Request for Oral Hearing was filed contemporaneously with the original Appeal Brief, with the required fee.

Appellant understands that this appeal will be "advanced out of turn" because the subject application is accorded "SPECIAL" status as a reissue application and because it has been pending for more than five years. M.P.E.P. §§ 708.01 (C), (I). The expedited "Special" status is especially important because no term extension or adjustment relief is available for a reissue application.

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I. REAL PARTY IN INTEREST

The real party in interest is Bayer CropScience Inc., a corporation of Delaware, having a place of business at Research Triangle Park, North Carolina. Bayer CropScience Inc. is the applicant of this reissue application and the patent owner and assignee of record. A statement under 37 C.F.R. § 3.73(b) by Bayer CropScience Inc. was most recently filed in this application on August 22, 2008. Appellant hereby identifies the following entity as relating to Appellant: Bayer CropScience LP (Delaware).

II. RELATED APPEALS AND INTERFERENCES

The present application seeks to reissue U.S. Patent No. 5,599,804 ("Mudge '804 Patent"), issued February 4, 1997, in the name of Laurence C. Mudge, as inventor. The only lawsuit or legal proceeding involving this application or the Mudge '804 Patent is a lawsuit that was filed on October 28, 2009, by Bayer CropScience LP, in the United States District Court for the Middle District of North Carolina, asserting infringement of claim 19 of United States Patent No. 5,599,804 ("the Mudge '804 Patent"). The caption for the case is: *Bayer CropScience LP. v. Tessenderlo Kerley, Inc. and Phoenix Environmental Care, LLC*, and it has been given the Civil Action No.: 1:09-cv-833.

III. STATUS OF CLAIMS

All of the presently pending claims 1-8, 10-17, 20-35, 37, and 38 have been finally rejected and are being appealed. Claims 9, 18, 19, and 36 have been canceled. No claim is allowed. A copy of the claims on appeal is presented in Appendix A, at pages 56-62.

IV. STATUS OF AMENDMENTS

No amendments or communications have been filed subsequent to the Final Rejection mailed July 8, 2009, and prior to the filing of the Notice of Appeal and this Appeal Brief.

Both method and composition claims issued in the Mudge '804 Patent. The patent claims were amended on three occasions during the prosecution of this reissue application. With the filing of this application: independent patent claims 1 and 10 were amended to expressly exclude the fungicide "mancozeb" from all of the method and composition claims; patent claim 9 was canceled; and new claims 24-38 were added.

An Amendment filed on December 27, 2005, modified language in the independent composition claims 10 and 23, *inter alia*, replacing "comprises" with "consists essentially of." On April 29, 2008, all of the independent claims 1, 10, 23, and 32 were amended by replacing the prior exclusion of the fungicide "mancozeb" with language excluding the broader class of "an ethylenebisdithiocarbamate contact fungicide."

V. THE CLAIMS ON APPEAL AND A CONCISE EXPLANATION OF EACH INDEPENDENT CLAIM WITH REFERENCES TO THE MUDGE '804 PATENT SPECIFICATION

The claims on appeal are: composition claims 10-17, 20, 21, 23, 32-35, and 37, with composition claims 10 and 32 being independent; and method claims 1, 5-8, 22, and 24-31, with claims 1 and 24 being the independent method claims.

A. General Overview Of The Claims

The claims on appeal generally relate to a synergistic fungicidal composition and a method for combating fungus in turfgrass and enhancing turfgrass quality by applying the claimed synergistic fungicidal compositions.

1. The Method Claims 1,5-8,22, And 24-31

Independent method claims 1 and 24, and dependent method claims 5-8, 22, 24, 25, and 27-31 are directed to a "method of combating fungi and enhancing turf quality in turfgrass." The method in all of these claims "comprises applying to said turfgrass synergistic fungicidally effective amounts of" two active agents. All of the method claims state that the method does not include the application to the turfgrass of "an ethylene bisdithiocarbamate contact fungicide."

Independent method claim 1 contains the broadest description in the claims for the active agents, as follows:

(a) a first active agent which is selected from the group consisting of . . . (i) a monoester salt of a phosphorous acid of Formula I [omitted] . . . and

(ii) phosphorous acid or an alkali metal or alkali earth metal salt thereof"; and
(b) a phthalocyanine.

Independent method claim 24 is narrower than method claim 1 in two respects: claim 24 describes the first active agent to consist essentially of the "(ii)" group of compounds recited in claim 1, *i.e.*, "phosphorous acid or an alkali or alkali earth metal salt thereof"; and claim 24 recites relative proportions, *i.e.*, 1 part by weight of the first active agent and from 0.01 to 0.1 parts by weight of a phthalocyanine compound.

Other method claims differ in the particular compounds selected for the active agents. Dependent method claim 22 describes the first active agent to be selected from the "monoester salt of a phosphorous acid of Formula I," while method claims 24-31 describe the first active agent to be selected from phosphorous acid and an alkali or alkali earth metal salt thereof. Some dependent claims specify that the phthalocyanine compound be Pigment Blue 15 (cls.3, 26), while other claims require the phthalocyanine compound not be Pigment Blue 15 (cls.4, 27).

2. Composition Claims 10-17, 20, 21, 23, 32-35, 37-38

Independent composition claims 10 and 32, and their respective dependent composition claims 11-17, 20, 21, 23, 33-35, 37 describe a "fungicidal composition for enhancing turf quality." The independent composition claims expressly exclude

the presence of "an ethylene bisdithiocarbamate contact fungicide." The independent composition claims define the "active material" of the fungicidal composition using the transitional phrase "consisting essentially of."¹

The "active material" is described to be "present in synergistic fungicidally effective amounts" and the "active material" is defined after the expression "consisting essentially of" by two active agents.

Independent composition claim 10 contains the broadest description among the composition claims for the active agents, as follows:

- (a) a first active agent which is selected from the group consisting of . . . (i) a monoester salt of a phosphorous acid of Formula I [omitted] and (ii) phosphorous acid or an alkali metal or alkali earth metal salt thereof"; and
- (b) a phthalocyanine.

Independent composition claim 32 describes the first active agent to be selected from subgroup "(ii)" in claim 10, i.e., phosphorous acid or an alkali metal or alkali earth metal salt thereof.

Some dependent composition claims specify that the phthalocyanine compound be Pigment Blue 15 (cls.16, 34), while

¹ Original dependent claim 19 of the Mudge '804 Patent described the composition of patent claim 10 also using the "consisting essentially of" terminology. Claim 19 was canceled in this proceeding after "consisting essentially of" was inserted in the independent composition claim 10.

other claims require the phthalocyanine compound not be Pigment Blue 15 (cls.17, 35).

B. Explanation of Independent Claims With References To The Mudge '804 Patent Specification

The independent method claims 1 and 24 describe a "method of combating fungi and enhancing turf quality in turfgrass." The independent composition claims 10 and 32 describe the composition as a "fungicidal composition for enhancing turf quality." The independent method and composition claims refer to "synergistic fungicidally effective amounts of" the two active agents being present in the particular composition or method.

The specification of the Mudge '804 Patent, under the "Summary of the Invention," describes the "present invention" to provide "a fungicidal composition for enhancing the quality of turfgrass and protecting against crown and root rot" which is a fungus. (Mudge '804 Patent 1:39-42.) In several places in the '804 patent specification the composition is described as comprising a "synergistic combination" of two active agents or ingredients. ('804 Patent 4:64-5:2.) In the Mudge '804 Patent at lines 41-61, the first active agent in the "synergistic combination of two active agents," corresponds to the same first active agent appearing in independent method claim 1 and composition claim 10.

Independent method claim 32 and independent composition claim 24 describe the first active agent to be the "(ii)" portion of the first active agent described in independent claims 1 and 10, *i.e.*, "phosphorous acid and an alkali or alkali earth metal salt thereof." This narrower description of the first active agent is clearly discernible from the broader disclosure discussed above that expressly describes it as a subgroup "(ii)." The '804 Patent specification also identifies the "(ii)" subgroup as an alternative embodiment: "Alternatively, the first active agent may be phosphorous acid or an alkali or alkali earth metal salt thereof."

In this same passage from the specification, the "(b)" active agent component is described as "a benzoporphyrin compound." (Mudge '804 Patent 1:62.) The specification makes clear that suitable benzoporphyrins include phthalocyanine dyes. (Mudge '804 Patent 4:27-63.) Phthalocyanines are the second active agent recited in all of the independent method and composition claims.

The patent specification describes the combination of "(a)" and "(b)" compounds as a "synergistic combination," (Mudge '804 Patent 4:64-6) and further describes this synergistic combination to relate to the relative amounts in which "(a)" and "(b)" active agents are present in the combination. (Mudge '804 Patent 4:64-5:9.) Also the patent

specification states: "The compounds are applied in an amount effective to enhance turf quality and/or protect against crown and root rot." (*Id.2:6-10.*) The specification also states: "The methods and compositions described herein are useful for improving turf quality and color in turfgrasses. (*Id.2:56-9.*)

All of the appealed claims exclude from the subject method or composition an "ethylene bisdithiocarbamate contact fungicide." The specification states that "[t]he synergistic combinations according to the invention may be used with advantage in admixture with one another or with other known fungicides...." (Mudge '804 Patent 5:10-12.) "Ethylene bisdithiocarbamate contact fungicide" is not mentioned in the list of other known fungicides in that passage although it is specifically mentioned elsewhere in the specification, e.g., the Mudge '804 Patent column 7 lines 15-16.

C. Grouping Of Claims For Consideration On Appeal

With respect to the issues raised by this appeal, four groups of claims must be separately considered. The four groups of claims are differentiated based on whether they are directed to a method or composition and which of two classes of compounds satisfy the "first active agent" in the claim. (See, e.g., pp.33-35, *infra.*) The four groups of claims are as follows:

- (i) method claims 1-8 and 22 wherein the first active agent can be met by the presence of a monoester salt of a phosphorous acid (e.g., fosetyl aluminum)
- (ii) method claims 24-31 which require the first active agent to be selected from phosphorous acid or an alkali or alkali earth metal salt thereof (i.e., not a monoester salt of a phosphorous acid)
- (iii) composition claims 10-17, 20, 21, and 23 wherein the first active agent can be met by the presence of a monoester salt of a phosphorous acid (e.g., fosetyl aluminum)
- (iv) composition claims 32-35, 37, and 38 which require the first active agent to be selected from phosphorous acid or an alkali or alkali earth metal salt thereof (i.e., not a monoester salt of a phosphorous acid).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Identified below are the two grounds of rejection made in the OA, which are to be reviewed on this appeal:

1. Whether claims 1-8, 10-17, 20-35, 37, and 38 are unpatentable as being obvious under 35 U.S.C. § 103(a) over:
 - Lucas US Pat. 5,336,661 ("Lucas '661 Patent");
 - the printout (www2.siri.org/msds/f2/bzz/bzzsc.html) for ingredients in Rohm and Haas Co.'s FORE™ Fungicide ("FORE™ Fungicide printout"); and
 - Collins US Pat. No. 5,206,228 ("Collins '228 Patent" or "Collins Patent").

2. Whether claims 1-8, 10-17, 20-35, 37, and 38 are unpatentable as being obvious under 35 U.S.C. § 103(a) over:

- Guillino *et al.* (Chemical Control Of Dollar Spot and Brown Patch Of Turfgrass In Italy, Mededelingen — Faculteit Landbouwkundige en Toegepaste Biologische Wetenschappen, Universiteit Gent, 1995, 60, 2b Proceedings, 47th International Symposium on Crop Protection, pt. 2, 1995, 367-70) ("Guillino");
- Fenn *et al.* (Phytopathology, 74(5), pp.606-611) ("Fenn");
- Kato *et al.* (JP 02138376; 5/28/1990) ("Kato"); and
- Nagashima *et al.* (JP 03221576; 9/30/91) ("Nagashima").

VII. ARGUMENT

A. Background

The invention at issue in this appeal relates to compositions and methods for enhancing the quality of turfgrass, particularly highly maintained turfgrasses as found in golf courses, lawns, and other landscape architecture applications. A primary problem in maintaining the quality of such turfgrass is the susceptibility to fungus disease, such as crown and root rot. (Mudge '804 Patent 1:12-18.)² This problem is also recognized in the prior art of record. (See, e.g., Lucas '661 Patent 1:13-18, under "Introduction.")

² Since the present application on appeal is a reissue application, citations in this brief to the specification of the originally filed patent application are made to the specification of the issued patent, the Mudge '804 Patent, by column:line numbers ("#:#"). References to other patents follow this same patent column:line number nomenclature.

The Examiner in the OA refers to two prior art commercial fungicidal products FORE® and ALIETTE™, that have been used to treat such turfgrasses. ALIETTE™, which contains fosetyl-Al (an aluminum salt of an ester of phosphorous acid), has been marketed as a fungicide since at least 1981. (See, e.g., Collins '228 Patent 1:21-26.) The FORE™ product contains the fungicide mancozeb (a member of the class of metallic ethylene bisdithiocarbamate contact fungicides) as the active ingredient and also includes a colorant, a phthalocyanine compound known as Pigment Blue 15.

Not mentioned by the Examiner is Appellant's commercial product SIGNATURE™, also known as CHIPCO® SIGNATURE™. This product, an embodiment of the claimed invention, containing fosetyl-Al and a phthalocyanine, but no mancozeb fungicide, has been marketed since about 1996 for use on highly maintained turfgrasses, especially those on golf courses. Appellant's commercial product SIGNATURE™ was presented at an interview with the Examiner in the subject application and summarized in the written record.³

An important part of the discovery of the claimed invention was the recognition that phthalocyanine does not only function as a colorant. A discovery was made that when a phthalocyanine is combined with certain fungicides and the combination is

³ At the Examiner's request, Applicant presented in the "Response" filed on April 24, 2009, a summary of the personal interview held on April 14, 2009, which included reference to the SIGNATURE™ product.

applied to turfgrass, the phthalocyanine functions to synergize or enhance the effectiveness of the fungicide, including improving the quality of growth of the turfgrass after the treatment. This function of phthalocyanine is illustrated in Examples in the Mudge '804 Patent, e.g., in Table 3. The examples report treatments of turfgrass with different formulations of fosetyl-Al + mancozeb, some containing a phthalocyanine. The mancozeb product FORETM contains the phthalocyanine compound Pigment Blue 15, while other mancozeb products (e.g., MANZATETM, LESCO MN80TM, PENCOZEB DF75TM, PROTECT DG80TM, and DITHANETM) do not contain a phthalocyanine. The Mudge '804 Patent specification reports that the phthalocyanine compound "Pigment Blue 15" in FORETM enhanced the activity and effects of the fosetyl-Al + mancozeb (FORETM) mixture compared to other fosetyl-Al + mancozeb formulations not containing Pigment Blue 15:

Table 1 below indicates that an improvement in turf quality and color was observed from application of ALLIETTETM + FORETM (treatment #4), with turf quality of 7.5 and a turf color of 7.8 with 9 being ideal. The combination of ALLIETTETM + MANZATETM had lower turf quality rating of 6.8 and a turf color of 7.0.

. . .

Table 3 is a comparative study of the effects of different formulations of mancozeb. The formulations of FORETM, WP80TM and FL4.0TM, which contain mancozeb + Pigment Blue 15 gave better turf quality and turf color than other formulations of mancozeb without the Pigment Blue 15. . .

Overall, the results indicate that the combination of ALLIETTETM + FORETM containing the Pigment Blue 15 provides a

better improvement in turf quality and color over other combinations of ALIETTE™ and mancozeb without the Pigment Blue 15. The results demonstrate that the presence of the Pigment Blue 15, enhances the activity of the ALIETTE™ and mancozeb in a synergistic interaction.

(Mudge '804 Patent 8:30-36, 9:25-30, 60-67; see also Mudge '804 Patent Table 3.)

Treatment No. 9 in Table 2 of the Mudge '804 Patent specification illustrates a composition of fosetyl-Al and blue phthalocyanine pigment which does not contain any mancozeb. Treatment no. 9 contains "EXP 10622." "EXP 10622" is explained at column 8, lines 63-64, in the context of treatment #10: "The combination of the experimental formulation of ALIETTE™ and the blue pigment (EXP 10622) + mancozeb (treatment #10). . ." Since EXP 10622 is ALIETTE™ + pigment, treatment no. 10 in Table 2 refers only to EXP10622 and mancozeb. In Table 2, if one compares treatment no. 6 (ALIETTE™) with treatment no. 9 (ALIETTE™ + blue pigment), one observes that the phthalocyanine blue pigment enhances the effect of ALIETTE™ .

These tests show that when a phthalocyanine is combined with certain fungicides and the combination is applied to turfgrass, the phthalocyanine functions to synergize or enhance the effectiveness of the fungicide including improving the quality of growth of the turfgrass after the treatment.

B. Summary Of Arguments

The two obviousness rejections on appeal fail to meet even the threshold requirements of a *prima facie* case of obviousness.

One of those requirements is that the prior art references "must teach or suggest all claim limitations." *Manual of Patent Examining Procedure* ("M.P.E.P.") § 2142, at 2100-128 (8th ed. Rev. 7, July 2008). In the Examiner's comparisons of the appealed claims with the prior art he ignores and gives no weight to the limitation "synergistic fungicidal effective amounts" present in all appealed claims. This "synergistic" claim limitation adds a real functional limitation to the claims which must be considered in determining obviousness under 35 U.S.C. § 103. For the Examiner to have ignored the "synergistic" claim limitation and to have provided no basis in the prior art for a reasonable expectation of synergistic properties is reversible error.

The Examiner acknowledged the existence of this "synergistic" limitation in the claims but concluded that he could ignore it when conducting the required analysis for determining obviousness. The Examiner's error in ignoring the "synergistic" limitation in the obviousness analysis is apparently based on a confusion between the rules regarding the submission of objective evidence of nonobviousness and legal principles for comparing the claims with the prior art in determining obviousness.

Unlike the classic case, where "synergism" is not mentioned in the claims, here all of the claims are subject to the express "synergistic" fungicidal limitation. Instead of addressing the

claimed invention with the "synergistic" claim limitation, the Examiner ignores the limitation and rationalizes obviousness based on the combining of the known colorant phthalocyanine with known fungicides to merely achieve a colored result. This was legal error. The Examiner failed to compare the prior art with the invention actually claimed.

The operative question in determining whether a claimed invention is obvious from the prior art is "whether the improvement is more than the predictable use of prior art elements according to their established functions." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417, 82 U.S.P.Q.2d (BNA) 1385, 1396 (2007).

A comparison of the prior art with the claims as properly limited with the "synergistic" limitation, could only have led to the conclusion that the claimed synergistic fungicidal composition and method would have been unpredictable and unexpected to a person of ordinary skill in the art. This conclusion follows because the colorant function for phthalocyanine established in the cited prior art is different from and would not suggest the claimed compositions and methods in which phthalocyanine functions as an active agent, contributor and synergist of synergistic fungicidal properties.

The Examiner has also committed factual errors in the findings made regarding the content and teachings of the prior art. Additionally, the Examiner has asserted unfounded

motivations for a person of ordinary skill in the art to modify prior art compositions, even where the modifications are directly contrary to the teachings of the prior art.

The appealed claims by their express language are limited to compositions and methods that are novel, possess unexpected "synergistic" properties and therefore would not be obvious to a person of ordinary skill in the art. The obviousness rejections should therefore be reversed.

C. Controlling Law Of Obviousness

On appeal to this Board, Appellant must show that the Examiner reversibly erred in finally rejecting the claims. *Cf. In re Kahn*, 441 F.3d 977, 985, 78 U.S.P.Q.2d (BNA) 1329, 1334 (Fed. Cir. 2006).

The only rejections of the appealed claims set forth in the OA are two rejections based on 35 U.S.C. § 103.

Section 103(a) forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

KSR, 550 U.S. at 406, 82 U.S.P.Q.2d at 1391.

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of ordinary skill in the art, and (4) whether there is evidence of so-called secondary considerations. *Graham v. John Deere Co.*,

383 U.S. 1, 17-18, 148 U.S.P.Q. (BNA) 459, 467 (1966). In *KSR*, the Supreme Court held that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S. at 416, 82 U.S.P.Q.2d at 1395. The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.*, 82 U.S.P.Q.2d at 1396.

In rejecting claims under 35 U.S.C. § 103(a), the Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d (BNA) 1443, 1444 (Fed. Cir. 1992); see also *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. (BNA) 785, 788 (Fed. Cir. 1984). Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *Oetiker*, 977 F.2d at 1445, 24 U.S.P.Q.2d at 1444; see also *Piasecki*, 745 F.2d at 1472, 223 U.S.P.Q. at 788. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See *Oetiker*, 977 F.2d at 1445, 24 U.S.P.Q.2d at 1444; *Piasecki*, 745 F.2d at 1472, 223 U.S.P.Q. at 788.

An obviousness analysis by the Examiner must articulate reasons why "there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418, 82 U.S.P.Q.2d at 1396; *Kahn*, 441 F.3d

at 985-86, 78 U.S.P.Q.2d at 1335; see also M.P.E.P. § 2143.01 III, IV.

All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); M.P.E.P. § 2143.03. All claim limitations must be considered, even if they are indefinite under 35 U.S.C. § 112, second paragraph, or unsupported by the specification under 35 U.S.C. § 112, first paragraph. See M.P.E.P. § 2143.03 and cases cited therein.

D. The Rejection Under § 103(a) Based On the Lucas '661 Patent, FORE™ Fungicide Printout, And Collins '228 Patent Should Be Reversed

1. Scope and Content of the Prior Art Pertinent To This Rejection And Level Of Skill In The Pertinent Art

a. The Lucas '661 Patent

The Lucas '661 Patent describes and claims methods and compositions for controlling crown and root rot and for enhancing turf quality in turfgrasses, such as bentgrass. The methods and compositions involve "synergistic combinations" of two active ingredients: (1) a first active agent selected from "a monoester salt of a phosphorous acid of formula I," and (2) "a metallic ethylene bisdithiocarbamate fungicide." (See, e.g., '661 Patent 1:26-48; 1:50-59.) The claims of the '661 Patent are directed to a process for treating bentgrass to enhance turf quality and comprises the two active ingredients

mentioned above, the "monoester salt of a phosphorous acid of formula I" and a "metallic ethylene bisdithiocarbamate fungicide." The '661 Patent teaches a person of ordinary skill in the art that the synergistic properties are the result of the combination of these two active agents.

The examples in the Lucas '661 Patent describe a mixture of the commercial fungicides ALIETTETM and FORE[®] to illustrate a combination of the two active ingredients of that patent.

The ALIETTETM product is described in the '661 Patent as containing the "active ingredient fosetyl-Al." ('661 Patent 4:56.) This compound falls within Formula I in the '661 Patent where "R" is ethyl and "Me" is aluminum. It is the aluminum salt of the mono ethyl ester of phosphorous acid. (*Id.* 2:17-18.) Fosetyl-Al also falls within formula I of the present claims on appeal.

The FORE[®] fungicide product is described as "obtained from Rohm and Haas" and having the "active ingredient: mancozeb." (*Id.* 4:60-61.) Mancozeb is one member of the class of "metallic ethylene bisdithiocarbamate contact fungicides. (*Id.* 2:20-23.)

b. The Rohm And Haas' FORETM Fungicide Printout

The Examiner has relied upon a printout of a document from the Internet of Rohm and Haas's Material Safety Data Sheet dated in 1992 for its FORE[®] Fungicide. The printout shows that the FORE[®] fungicide described in the '661 Patent actually contained a phthalocyanines; namely, "Pigment Blue 15." (See OA 2.)

Appellant has never disputed that the FORE® Fungicide described in the '661 Patent actually contained Pigment Blue 15. This fact was acknowledged in the original Mudge patent application ('804 Patent 7:65-66) and in the reissue declarations by the patent owner filed with this reissue application. (Reissue Decl. filed May 19, 2004, and Jan. 7, 2005, at 4; Prelim. Remarks filed May 19, 2004 at 4.)

The Rohm and Haas printout also identifies other ingredients in the FORE® product in addition to mancozeb and Pigment Blue 15.

c. The Collins '228 Patent

The Collins '228 Patent relates to the use of certain known fungicidal compounds such as phosphorous acid, certain of its metal salts and certain of its monoester metal salts, e.g., fosetyl-Al, the active ingredient in the ALIETTE™. The Collins '228 Patent acknowledges that these phosphorous acid and salt compounds were known for treating plant fungal diseases. It specifically identifies the commercial product ALIETTE™ as having been used to treat plant fungal diseases as early as 1981 (ten years prior to its 1991 filing date). (Collins '228 Patent 1:21-30.)

The Collins '228 Patent does not report any instance in which ALIETTE™ or any other phosphorous acid derivative was actually combined with a phthalocyanine compound in the treatment of fungal diseases in plants or in any other use.

The Collins '228 Patent is directed to using the foregoing phosphorous acid and derivatives for controlling arthropod pests in the vicinity or locus of plants. (*Id.* 2:30-53.) According to Collins, when applying such compounds to plants to control fungus disease, such compounds would also be controlling arthropod pests that are present on or in the locus of the plants. The Collins patent describes the phosphorous acid and derivative compounds equivalently, not identifying any one compound to be better than any other in the treatment of arthropod pests.

The Examiner relies upon the disclosure in the Collins '228 Patent (12:20-21) of "metal phthalocyanine dyestuffs" as an optional colorant to be a teaching for combining this colorant with a phosphorous acid or a metal salt thereof in a composition of the Collins' invention for controlling arthropod pests.

The Collins patent lists phthalocyanine among a broad list of many classes of colorants with no stated preference for a phthalocyanine. ('228 Patent 12:17-22.) The Collins patent identifies "colorants" as one category among a list of many optional additives for "compositions of the invention" which include carriers (*id.* 11:26-59), surface-active agents (*id.* 11:59 *et seq.*), etc. Despite some 15 examples in the Collins '228 Patent, the patent never describes a composition in which a colorant is actually combined with fosetyl-Al, phosphorous acid, or any other phosphorous acid derivative.

The Collins '228 Patent also identifies compounds that function as a "synergist" when combined with phosphorous acid or one of its identified salt derivatives. That list of "synergists" does not include any phthalocyanine. ('228 Patent 12:23-35.) Thus, Collins '228 Patent merely teaches phthalocyanines as one among many colorants which are optional additives and which are not "synergists," and therefore do not promote or enhance the subject fungicidal or pesticidal properties of phosphorous acid or its monoester or metal salt derivatives.

2. The Examiner Failed To Establish A *Prima Facie* Case of Obviousness Because The Examiner Erroneously Compared The Prior Art To The Claims Without The "Synergistic" Claim Limitation

The Examiner acknowledges that the appealed claims describe a "synergistic fungicidal composition" and a method of applying that synergistic composition:

Applicant's claims are drawn to a synergistic fungicidal composition comprising a monoester salt of a phosphorous acid or phosphorous acid or alkali or alkali earth metal salt thereof plus a phthalocyanine compound such as Pigment Blue 15. Applicant's claims are also drawn to a method of applying said composition to turfgrass to combat fungi growth and enhance turfgrass quality.

(OA 7.)

In connection with the second obviousness rejection, the Examiner further explains that the meaning of the term "synergistic" in the claims is "to describe the combined activity of said phthalocyanine and fosetyl-Al or phosphorous compound..."

(OA 8.)

Independent method claims 1 and 24 require "applying to said turfgrass synergistic fungicidally effective amounts of...a first active agent ... and ... phthalocyanine." The independent composition claims 10 and 32 state: "the active material present in synergistic fungicidally effective amounts consists essentially of...a first active agent...and...phthalocyanine."

The Federal Circuit has held that the claim language "synergistically effective amount" is a claim limitation. *Geneva Pharms., Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384, 68 U.S.P.Q.2d 1865, 1873 (Fed. Cir. 2003) ("By its terms, a 'synergistically effective amount' is a functional limitation. As explained in *In re Swinehart*, 439 F.2d 210, 213, 169 U.S.P.Q. (BNA) 226, 229 (C.C.P.A. 1971), a functional limitation covers all embodiments performing the recited function."). The Federal Circuit and the USPTO recognize the term "synergistic" to mean that the properties of the combination is greater than the separate, individual contributions of the components. M.P.E.P. § 716.02(a)(I); *Merck & Co. v. Biocraft Labs. Inc.*, 874 F.2d 804, 10 U.S.P.Q.2d 1843 (Fed. Cir. 1989).

When the Examiner carried out the comparison of the claims with the prior art, as required under 35 U.S.C. § 103, the Examiner did not apply the claims with the "synergistic" limitation, but instead utilized a modification of the claims that did not include the "synergistic" limitation.

In response to Applicant's argument that the claims are limited by the "synergistic" fungicidal limitation, the Examiner explained that the reason for his ignoring the synergistic limitation was that the Examples in the Mudge application did not provide sufficient comparative tests to prove synergism for the scope of the claims.⁴ The Examiner stated at OA 5:

The Examiner argues that the Examples in the instant specification requires mancozeb. The claims are not commensurate in scope with the Examples yielding unexpected results.

Later in the Office Action (OA 8-9), with respect to the second obviousness rejection, the Examiner reiterated his reasoning for ignoring the "synergistic" limitation in the claims:

With respect to the term "synergistic" used in the claims to describe the combined activity of said phthalocyanine and fosetyl-Al or phosphorous compound, the Examiner would like to point out that all of the examples in the specification and declarations showing synergism include mancozeb. The Examiner further points out that Applicant does not provide examples showing synergism for a combination comprising only phosphorous acid or fosetyl-Al

⁴ The OA suggests some need for Appellant to submit a showing of synergistic results. Appellant remains of the view that such evidence is unnecessary here because Appellant has expressly recited in the claims the limitation that the phthalocyanine compound and the first active agent together must be present in an amount to provide "synergistic" fungicidally effective properties and enhancement of turf quality. In an interview conducted with the Examiner prior to the OA, after discussing the "synergistic" claim limitation, the Examiner concurred that there was no reason to present a showing by declaration. Appellant summarized the position expressed by the Examiner in applicant's "Response." (Resp. 4, Apr. 4, 2009.) In the OA, the Examiner did not disagree with Applicant's interview summary. Additionally, Appellant contends that the Examiner has not established a *prima facie* case of obviousness, which would require Appellant to come forward and present any evidence to rebut obviousness. Finally, the Examples in the Mudge application do provide test results showing a phthalocyanine does contribute to fungicidal effects in turfgrass, which is a function for phthalocyanine not disclosed in the cited prior art. (See pp. 8-10, *supra*.)

plus a phthalocyanine lacking the fungicide (mancozeb). The claims are not commensurate in scope with the examples provided in the declarations.

The Examiner's error in ignoring the "synergistic" limitation appears to be based on a confusion between the rules regarding the submission of objective evidence of nonobviousness after a *prima facie* case of obviousness is established versus the legal requirement of comparing the claims with the prior art to determine if there is a *prima facie* case of obviousness in the first instance. This is not a case in which synergism must be established by submission of evidence of objective, comparative tests. Here, "synergism" is a requirement of the claimed invention because it is an express limitation in all of the claims.

The Examiner's failure to give effect to the "synergistic" limitation in all claims when the claims were compared with the prior art was a reversible error. The M.P.E.P. states in no uncertain terms that an Examiner cannot ignore claim limitations in considering the obviousness issue:

All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (C.C.P.A. 1970).

M.P.E.P. §2143.03. All claim limitations must be considered, even if they are indefinite under 35 U.S.C. §112, 2nd paragraph or unsupported by the specification under 35 U.S.C. 112, 1st paragraph. *M.P.E.P. § 2143.03*

Here, the appellant relies upon the express "synergistic" limitation contained in all claims as a patentable distinction of the claimed invention over the prior art. The claim limitation "synergistic fungicidally effective amounts" is a proper functional limitation and must be considered in the obviousness analysis for (i) identifying the differences between the claimed invention and the prior art, and (ii) whether those differences would have been obvious to a person of ordinary skill in the art. *Graham*, 383 U.S. at 17-18, 148 U.S.P.Q. at 467; *KSR*, 550 U.S. at 406, 82 U.S.P.Q.2d at 1391.

The Examiner has only identified a coloring function for phthalocyanine in the cited prior art. The Examiner has not found in the cited prior art a description, teaching, or suggestion that phthalocyanine would contribute with the first active agent as defined in the claims, to produce synergistic fungicidal compositions.

The Examiner has thus failed to establish a *prima facie* case of obviousness. As stated in the M.P.E.P.: "The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness." M.P.E.P. § 2142. The failure to establish a *prima facie* case is fatal to a rejection. Fundamental to establishing a *prima facie* case of obviousness is the Examiner's explanation as to why the difference(s) between the prior art and the claimed invention would have been obvious

to a person of ordinary skill in the art. *KSR*, 82 U.S.P.Q.2d at 1395.

Here, the Examiner has not established that the combined teachings of the prior art references teach or suggest to a person of ordinary skill in the art the invention as claimed and specifically the Examiner has failed to show a prior art teaching of "the reasonable expectation of success" in achieving the claimed "synergistic fungicidal" compositions based on the phthalocyanine/first active agent combination.

The only suggestion by the Examiner that the prior art contains a description that phthalocyanine has any effect on fungicidal properties in turfgrass is an erroneous suggestion, not based on prior art, but based on a discovery disclosed in the present Mudge patent application. The Examiner's cannot rely upon the patent applicant's own disclosure which is not part of the prior art.

In the OA, the Examiner refers to a disclosure purportedly appearing in the Lucas '661 Patent, as follows:

The Lucas ['661 Patent] ALIETTE and FORE formulations comprising the above ingredients realized significant improvements in turf color as compared to other Mancozeb containing formulations lacking Pigment Blue 15. See col. 5-6.

(OA 2)

The '661 Patent fails to contain the above disclosure. The entire '661 Patent describes only one source of mancozeb: the FORE® product from Rohm & Haas. (See '661 Patent 4:60-61.)

The disclosure of the testing of different formulations of mancozeb, some without Pigment Blue 15, is described in the Mudge patent application (Mudge '804 Patent 9:26-30.)⁵ (See discussion at pp.8-9, *supra*.) Therefore, the Examiner has erroneously attributed to the Lucas '661 Patent a discovery set forth in the Mudge application. As discussed at pages 11-13, *supra*, the tests in the Mudge application show formulations of fosetyl-Al + mancozeb containing phthalocyanine Pigment Blue 15 that provide maximum control of fungus and higher rated turfgrass quality of growth and natural color compared with formulations of fosetyl-Al + mancozeb that do not contain Pigment Blue 15.

The only function of phthalocyanine shown in the prior art cited by the Examiner is as a colorant. The necessary conclusion from the prior art is that it would have been unexpected and unpredictable to a person of ordinary skill in the art that combining phthalocyanine with the first active agent (e.g., fosetyl-Al), would result in a fungicidal composition having synergistic fungicidal effects. The synergistic improvement achieved by the claimed compositions and the methods employing them is "more than the predictable use of prior art elements according to their established functions."

⁵ This same disclosure also appears in U.S. Patent No. 5,643,852 ("Lucas-Mudge '852 Patent"), which was filed on April 3, 1995, the same day as the original Mudge application, which issued as the Mudge '804 Patent. The Lucas-Mudge '852 Patent is therefore not prior art. (See Lucas-Mudge '852 Patent 9:53-61; 11:40-46.)

The Examiner has not established a *prima facie* case of obviousness and the rejection should be reversed. Moreover, on this record it is undisputed that the appealed claims with their "synergistic" limitation would have been unexpected to a person of ordinary skill in the art and therefore nonobvious and patentable.

3. The Examiner's Erroneous Factual Findings Regarding The Prior Art Require Reversal Of The Rejection

a. The Rejection is Infected With A Hindsight Analysis Because The Examiner Erroneously Relied Upon Test Results From The Mudge Application

As discussed at pages 27-28, *supra*, the Examiner erroneously attributes the following disclosure to the prior art Lucas '661 Patent:

The Lucas ['661 Patent] ALIETTE and FORE formulations comprising the above ingredients realized significant improvements in turf color as compared to other Mancozeb containing formulations lacking Pigment Blue 15. See Col. 5-6.

Not only does the '661 Patent fail to contain the above disclosure, but the above disclosure comes from the Mudge application. ('804 Patent 9:26-30, 60-67.) Hence the Examiner has violated the fundamental legal principle that an inventor's own discovery cannot be used as prior art against him. *Riverwood Int'l Corp v. R. A. Jones & Co.*, 324 F.3d 1346, 1354, 66 U.S.P.Q.2d (BNA) 1331, 1337 (Fed. Cir. 2003). The Examiner has also committed hindsight in the evaluation of the prior art by relying upon Mudge's own disclosure.

The Examiner's above-quoted summary of the testing of mancozeb formulations, with and without pigment, does not present a complete summary of the test results described in the Mudge Application (Mudge '804 Patent). The Examiner states that the formulations containing the Pigment Blue 15 "realized significant improvements in turf color as compared to other mancozeb containing formulations lacking Pigment Blue 15...." (OA 3 emphasis added.) The Mudge '804 Patent repeatedly states that the improvement was in both "turf quality" and "turf color." ('804 Patent 9:26-30, 60-65.) This, of course, also reflects control of fungal disease. According to the Mudge '804 Patent, the overall improvement was related to the health and growth of the treated turfgrass as observed weekly in separate ratings for turf quality and turf color in the new growth of the turfgrass. The Turf quality rating relates to the uniformity and density of the new growth while the turf color rating is separately measured as the "darkness" or intensity of the natural green color in the new turfgrass growth.

Since the Examiner in support of the obviousness rejection relies upon a purported disclosure that is simply not present in the primary prior art reference, the Lucas '661 Patent, the rejection is fatally flawed. The Examiner's entire analysis of the prior art in this rejection is infected with the hindsight use of a disclosure from the Mudge application.

**b. The Examiner Erred In Finding That
The '661 Patent Disclosed Pigment
Blue 15 As A Separate Active Ingredient**

In the OA, the Examiner refers to the FORE®/ALIETTE™ mixture in the examples of the Lucas '661 Patent and concludes that the patent teaches a 3-component formulation. The Examiner states that the Lucas '661 Patent: "teaches turfgrass formulations comprising: a ...certain monoester salts of phosphorous acid for example fosetyl-Al (preferably Aliette TM) and b...mancozeb (preferably FORE T.M.) and c...Pigment Blue 15 as the phthalocyanine." (OA 2-3 emphasis added.)

The Examiner is incorrect in asserting that the Lucas '661 Patent "teaches" Pigment Blue 15 as a separate ingredient of the turfgrass compositions and in ascribing to the Pigment Blue 15 a status equal to the two "active ingredients" actually described in the Lucas '661 Patent, *i.e.*, the bisdithiocarbamate contact fungicide (preferably, mancozeb) and the monoester salts of phosphorous acid (preferably, fosetyl-Al). The '661 Patent never mentions that any composition or example contained a phthalocyanine pigment or the specific Pigment Blue 15. The '661 Patent describes only two active ingredients — the ethylene bisdithiocarbamate component and certain monoester salts of phosphorous acid.

In the obviousness rejection, the Examiner expressly relied upon the foregoing description of the 3-component composition in the Lucas '661 Patent to reason that it would be obvious to

substitute or replace only the mancozeb in the Lucas '661 Patent formulation with a phosphorous acid or a metal salt thereof from the Collins patent to result in a modified three-component formulation of (1) phthalocyanine, (2) the monoester salt of phosphorous acid (fosetyl-Al from ALIETTETM) and (3) a phosphorous acid or metal salt thereof.

The Examiner only reaches the conclusion that Pigment Blue 15 was present in the exemplified FORE®/ALIETTETM mixture in the Lucas '661 Patent by relying upon the second cited reference, the separate Rohm and Haas printout which identifies ingredients in FORETM as including the phthalocyanine colorant, Pigment Blue 15 among other materials. The Lucas '661 Patent nowhere mentions the presence of phthalocyanine or Pigment Blue 15. More importantly, the Lucas '661 Patent identifies only two active ingredients in the exemplified compositions that contribute to synergistic, fungicidal properties and which enhance the quality of turfgrass: "fosetyl-Al," the "active ingredient" in AlietteTM ('661 Patent 4:56) and "mancozeb," the "active ingredient" in FORETM (*Id.* 4:60-61; *see also* '661 Patent claims).

What the Lucas '661 Patent actually teaches to a person of ordinary skill in the art is a composition and method for treating turfgrass which has two active agents which are identified as "synergistic" active agents. In its broadest disclosure, the active agents in the fungicidal composition and

process for treating turfgrass are described as "(a) a monoester salt of a phosphorous acid of formula (I)...; and (b) a metallic ethylene bisdithiocarbamate contact fungicide." ('661 Patent 1:26-61.) It is the combination of these two specific components that are essential to the synergistic effective treatment described in the '661 Patent.

Despite the incidental and inherent presence of a phthalocyanine colorant in the FORE™ fungicide source for the mancozeb used in the examples, the Lucas '661 Patent never recognizes the colorant and does not teach nor suggest the colorant to be an active agent in the composition or process of that invention.

It is an error for the Examiner to attribute Pigment Blue 15 as having a status separate from mancozeb and as having a status as an active agent. If mancozeb were excluded from the examples in the '661 Patent, the entire source of the mancozeb would be eliminated, *i.e.*, the FORE® fungicide with its Blue Pigment and its other ingredients. Simply stated - removal of mancozeb from the composition in the '661 Patent leaves ALIETTE™.

c. The Examiner Erred In Finding Mancozeb And Phosphorous Acid/Metal Salt Compounds To Possess "Analogous" Fungicidal Properties Rendering Them Interchangeable

The Examiner identifies no specific basis for his finding that mancozeb and phosphorous acid and its alkali metal and

alkaline earth metal salts possess "analogous" fungicidal properties and that they are interchangeable. (See OA 4.)

The '661 Patent repeatedly teaches mancozeb and the monoester salts of phosphorous acid (fosetyl-Al) to have non-analogous and different fungicidal properties. For example, Fosetyl-Al is described to be active against the Phythium species of fungus while mancozeb is described to be additionally active against the Rhizotonia species of fungus. ('661 Patent 4:53-61.)

The specific disclosure in the '661 Patent that synergistic properties result from the combination of mancozeb and monoester salts of phosphorous acid, is another teaching in the Lucas '661 Patent that mancozeb and the monoester salts of phosphorous acid are not analogous and not equivalent and do not possess the same properties. According to the '661 Patent, the mancozeb and monoester salt of phosphorous acid each provide something unique, which is why their combination yields results greater than their separate contributions.

The Lucas '661 Patent describes the salts of the monoesters of phosphorous acid but does not refer to phosphorous acid or its alkali metal or alkali earth metal salts. Therefore, the Lucas '661 Patent presents no direct comparison between mancozeb and phosphorous acid and its metal salts.

However, a person of ordinary skill in the art would expect from the chemical structures of the compounds, that the class of phosphorous acid and its metal salts, not mentioned in the '661 Patent, would function more similarly to monoester salts of phosphorous acid (fosetyl-Al) than to the very different chemical mancozeb (an ethylene bisdithiocarbamate).

The Collins '228 Patent effectively extends the teachings of the Lucas '661 Patent to phosphorous acid and its alkali metal and alkali earth metal salts. The Collins '228 Patent equates or at least treats equivalently the monoester salts of

phosphorous acid with the class of phosphorous acid and its metal salts as fungicidal compounds. (Collins '228 Patent 1:21-26.) They are generally discussed as equivalents and they appear in Markush language as equivalents. (See, e.g., Collins '228 Patent 1:36-53, cl.1.)

Therefore, since the Lucas '661 Patent repeatedly describes mancozeb as not analogous and not equivalent to the monoester salts of phosphorous acid, and because the Collins patent describes the latter monoester compounds to be equivalent to phosphorous acid and its metal salts, a person of ordinary skill in the art would not have expected mancozeb to be analogous or equivalent to phosphorous acid and its metal salts.

The Examiner's unsupported finding that mancozeb is analogous, equivalent to, or interchangeable with phosphorous acid or its metal salts is contradicted by the cited prior art and is therefore erroneous. The erroneous finding of analogous and interchangeable properties constitutes reversible error, because the asserted analogous properties and interchangeability between mancozeb and phosphorous acid or its metal salts is a fundamental fact the Examiner relies on in his modification of the FORE®/ALIETTE™ mixture in the Lucas '661 Patent.

**d. The Examiner Made Erroneous Findings In
Comparing The Appealed Claims With The Examiner's
Asserted Modifications To The Lucas '661 Patent**

In the OA, the Examiner made erroneous findings in comparing the appealed claims with a hypothetical composition that would result from the Examiner's proposed modification of the FORE®/ALIETTE™ mixture in the Lucas '661 Patent. Those erroneous findings also require reversal of the obviousness rejection. The Examiner stated:

The Lucas reference composition and method differs from the instant claims insofar that it fails to teach:

a. the substitution of the anti-fungal agent mancozeb with a different antifungal agent such as phosphorous acid or alkali/alkaline earth metal salt thereof (for all the instant claims) In this regard, it is noted that mancozeb is an ethylenebisdithiocarbamate fungicide excluded from the instant claims;

b. the substitution of Pigment Blue 15 with a different phthalocyanine compound (only instant claims 4, 17, 27 and 35).

(OA 3)

The Examiner in the above-quoted excerpt suggests that if a person of ordinary skill in the art removed mancozeb from the FORE®/ALIETTE™ mixture, and replaced the mancozeb with "phosphorous acid or alkali/alkaline earth metal salt thereof" (assuming the phthalocyanine was retained in the modified composition), then the resulting composition would have three components that would correspond to the compositions of the Appealed claims. The Examiner is wrong for several reasons.

First, the Examiner's comparison findings are erroneous because they ignore and fail to consider the "synergistic" limitation in all of the claims. (See pp.19-26, *supra*.)

Second, the Examiner's comparison findings are erroneous because removal of the mancozeb from the FORE™/ALIETTE™ composition in the Examples of the Lucas '661 Patent would necessarily also remove the phthalocyanine Pigment Blue 15, creating a two-component composition which further differs from the appealed claims because no phthalocyanine would be present. (See pp.28-31, *supra*.)

Third, the Examiner erred in failing to consider the specific limitations in composition claims 32-35 and 37-38, which require the active material "to consist essentially of" a first active agent, selected from phosphorous acid and its alkali metal and alkaline earth metal salts and a phthalocyanine. These claims are not open to the inclusion of a monoester salt of phosphorous acid, which is a necessary component in the Examiner's hypothetical modified composition.

The legal effect of the terminology "consists essentially of" in these claims is to exclude a salt of a monoester of phosphorous acid, e.g., Fosetyl-Al. *In re Herz*, 537 F.2d 549, 551-52, 190 U.S.P.Q. 461, 463 (C.C.P.A. 1976); M.P.E.P. § 2111.03.

Fourth, the Examiner erred in failing to consider the specific limitations in composition claims 11-14, 17, and 23 which require the active material to consist essentially of (i) a first active agent which is a monoester salt of phosphorous acid according to Formula I and (ii) a phthalocyanine.

In view of the "consisting essentially of" language in claims 11-14, 17, and 23, the claims would not be open to the inclusion of phosphorous acid or an alkali or alkaline metal salt thereof. However, according to the rejection the Examiner's modification of the FORETM/ALIETTETM mixture in the

Lucas '661 Patent requires the presence of phosphorous acid or an alkali or alkaline metal salt thereof.

Therefore, the Examiner erred in concluding that the hypothetical modification of the FORE®/ALIETTE™ mixture would result in a composition falling within composition claims 11-14, 17, 23, 32-35, and 37-38.

4. The Examiner Erred In Finding Motivation To Make The Asserted Modifications To The FORE®/ALIETTE™ Mixture In The Examples Of The Lucas '661 Patent

The Examiner's purported "motivations" for modifying the FORE®/ALIETTE™ mixture in the examples of the Lucas '661 Patent are erroneous because they are based on erroneous facts, are inconsistent with the record, and contrary to the teachings of the cited prior art.

The Examiner's initial assertion to remove mancozeb from the FORE®/ALIETTE™ mixture is contrary to the Lucas '661 Patent, which describes the combination of the two active ingredients - mancozeb and the monoester salt of phosphorous acid - to be critical and to provide a "synergistic combination." It is a fundamental principle that a person of ordinary skill in the art would not modify a prior art disclosure in a manner contrary to its teachings. M.P.E.P. § 2143.01 (citing *In re Ratti*, 270 F.2d 810, 813, 123 U.S.P.Q. (BNA) 349, 352 (C.C.P.A. 1959)).

The Examiner's asserted removal of mancozeb from the FORE®/ALIETTE™ mixture in the Lucas '661 Patent would simply motivate a person of ordinary skill in the art to reverse the Lucas '661 Patent combination of the FORE® and ALIETTE™ commercial fungicides and to utilize ALIETTE™ alone. ALIETTE™ contains no phthalocyanine ingredient. The ALIETTE™ product contained no phthalocyanine compound before the combination described in the '661 Patent and there is no reason for a person of ordinary skill in the art to take apart the FORE® product to only remove mancozeb.

The Examiner further asserts that the modification of the FORE®/ALIETTE™ mixture is motivated by the "analogous anti-fungal activities" possessed by mancozeb and phosphorous acid and its metal salts and their resulting interchangeability. (OA 4.) As shown, *supra* at pages 33-35, the Examiner does not substantiate his assertions of analogous fungicidal activities and interchangeability and the assertions are contrary to the cited prior art. The Examiner's motivation to replace mancozeb with phosphorous acid or its metal salts is erroneous because the findings of analogous properties and interchangeability was error.

The Examiner's modification of the FORE®/ALIETTE™ mixture to combine the (i) monoester salts of phosphorous acid of Formula I, and (ii) the class of phosphorous acid and its alkali and alkali earth metal salts also lacks motivation because the

Collins '228 Patent describes these two categories of compounds to be equivalent. (See, e.g., Collins '228 Patent 2:40-53 Formula I, cl.1.) The Examiner has not pointed to any rationale for a person of ordinary skill in the art to combine two categories of phosphorous compounds which are recognized in the cited prior art as equivalent.

The Examiner states in the paragraph bridging pages 5 and 6 of the OA: "According to Collins, there is an added motivation toward substituting mancozeb with a fungicide that will keep away pest (abstract)." (See also OA 11.1-6, 10-15.) The Examiner argues in these passages that because the Collins '228 Patent teaches that phosphorous acid and alkali and alkaline earth metal salts thereof also have insecticidal properties, that a person would have an "added benefit" to add a phosphorous acid or its metal salts to the FORE®/ALIETTE™ mixture after removal of the mancozeb. However, that motivation does not exist because that "benefit" of a Collins pesticide is already present in the FORE©/ALIETTE™ mixture because it already contains the fosetyl-Al (monester salt of phosphorous acid in ALIETTE™), which Collins describes as having the same or equivalent insecticidal properties as phosphorous acid or alkali metal or alkaline earth metal salts thereof.

The Examiner next asserts that the Collins Patent's "teaching yields a composition comprising instant phosphorous compounds plus Pigment Blue." (OA 6.) The Examiner fails to

point out that the naming of phthalocyanine dyestuffs in the Collins '228 Patent is among a broad list of possible colorants, which appears in an even longer list of possible optional additives, that in context provides no motivation for a person of ordinary skill to specifically choose a phthalocyanine in combination with one of the phosphorous acid derivatives to be used as a fungicidal composition. (See Collins '228 Patent 11:19 to 12:36.) There is no preference stated for the phthalocyanine class.

It is further noted that despite some 15 examples, the patent never combines fosetyl-Al or any other phosphorous acid derivative with a colorant. Nor does Collins suggest modifying the long-established commercial fungicide product ALIETTE™ to include a phthalocyanine.

The Collins patent also recognizes that some materials when included in the pesticidal compositions can function as "synergists" for a phosphorous acid or its salt derivatives. However, the Collins patent expressly excludes colorants from the list of such "synergists." (Collins '228 Patent 12:23-35.)

In summary, the Collins '228 Patent does not suggest the modification of ALIETTE™ or other phosphorous acid or metal salts thereof when used as a fungicide and does not provide motivation to modify the FORE®/ALIETTE™ mixture of the Lucas' 661 patent in the manner asserted by the Examiner.

**E. The Rejection Under § 103(a)
Based On Guillino, Fenn, Kato
And Nagashima Should Be Reversed**

Claims 1-8, 10-17, 20-35, 37, and 38 have been rejected as being obvious under 35 U.S.C. § 103(a) over four publications: Guillino, Fenn, Kato and Nagashima.

In this second rejection the Examiner has again failed to establish a *prima facie* case of obviousness. In the legal analysis for determining obviousness the Examiner has not applied all of the limitations of the claims in the comparison with the prior art. Most glaring is the Examiner's failure to apply the "synergistic" claim limitation which constitutes reversible error.

1. The Content Of The Four Prior Art Publications

The references relied upon in this rejection fall into two categories. In the first category, the Guillino and Fenn publications generally describe fungus disease that affects turfgrass, with the Fenn publication additionally describing phosphorous acid and Fosetyl-Al as being fungicidally effective in controlling such fungus as Rhizotonia. The Fenn publication primarily describes *in vitro* tests for evaluating fungicidal activity and doesn't evaluate the effectiveness in enhancing the quality of turfgrass growth after treatment.

The second category of publications, the Kato and Nagashima publications, do not refer to fungus disease in turfgrass and do not refer to any composition or method for improving the health

or growth of turfgrass. Instead, these references refer to treating withered, dead or dormant grass and to compositions and methods for causing a colorant, e.g., phthalocyanine, to adhere or bind to the blades of the dead or dormant grass to obscure the brownish or undesirable color and impart a desired color, such as green.

The Examiner relies upon Gullino for its teachings that the "fungus *Rhizotonia solani*" is a cause of "brown patches in turfgrass." (OA 6.) Guillino teaches that turfgrass such as on golf greens tend to have fungus disease which can be treated with fungicides. None of the phosphorous acid-based fungicides at issue in the appealed claims are described in the Guillino publication.

The Examiner identifies the Fenn Publication as the only reference relied upon in this rejection that refers to any phosphorous acid or derivatives thereof as fungicides. Fenn describes them for treating "phytophthora" root rot species and for controlling "*Rhizotonia solani*." (*Id.* at 6.) Also, the Examiner acknowledges that neither the Gullino nor the Fenn publication teaches the use of a phthalocyanine compound or any other colorant. (*Id.*)

The Kato publication describes a "withered grass coloring composition" that is relied upon by the Examiner for its teaching that "green dye can be applied to brown dead lawn areas in golf courses (turfgrass) to restore the desired green

appearance." (*Id.*) Of course, the green dye is not meant to cause the grass in its growth after treatment to naturally provide its own green color. Kato describes the function of the green dye to cover-up the brown areas and provide a coated green color to the grass that might be similar to a natural green grass color.

The Kato composition requires the colorant (e.g., phthalocyanine blue) to be combined with a resin aqueous emulsion (e.g., vinylidene chloride resin emulsion or vinyl chloride resin emulsion) to function as a "binder" to affix the coloring agent to the foliage or blades of grass. (See, e.g., Kato at 4, ll. 11-16.)

The Nagashima publication is relied upon by the Examiner to "teach that a pigment blue 15 colorant can be added to dead grass to restore the color of grass." (OA 6.) Nagashima's "turf coloring agent" is a composition containing a colorant and an "acrylic acid ester-styrene copolymer emulsion." The copolymer functions as a binder to adhere the colorant to the foliage surface and prevent it from washing off with rain. Nagashima chooses the particular properties of the copolymer emulsion to obtain excellent "color fastness" in rain. (See, e.g., OA 6) Nagashima describes this binder as an improvement over prior binders used with colorants, which tended to wash off more readily in rain.

Kato and Nagashima both require the presence of a resin binder to cause the colorant to adhere to the grass for an extended time period without washing off from rain. The limited use of the coloring compositions to dead or dormant grass is essential to the usefulness of the colorant compositions and coloring methods. With dead or dormant grass it is unlikely that there would be supplemental watering beyond rainfall, which avoids additional water that would accelerate wash off of pigment coated on the grass. Also, the dead or winter dormant grass is essentially not growing and does not require regular cutting. This is significant because the Kato and Nagashima coloring compositions would have minimal usefulness if applied to growing grass that requires regular cutting, normally at a frequency of one or two times per week. If the grass were growing and regularly cut, then the color-resin coating on the grass would be "cutoff" even before it washes off from rain water.

2. The Examiner Failed To Establish A *Prima Facie* Case of Obviousness Because The Examiner Erroneously Compared The Prior Art To The Claims Without The "Synergistic" Claim Limitation

In this rejection, the Examiner preliminarily summarizes the appealed claims as follows:

Applicant's claims are drawn to a synergistic fungicidal composition comprising a monoester salt of a phosphorous acid or phosphorous acid or alkali or alkali earth metal salt thereof plus a phthalocyanine compound such as Pigment Blue 15. Applicant's claims are also drawn to a

method of applying said composition to turfgrass to combat fungi growth and enhance turfgrass quality.

(OA 7.) However, as in the first obviousness rejection involving the Lucas '661 Patent, the Examiner again ignores and reads out of the claims the "synergistic" limitation in conducting the obviousness analysis comparing the claims with the prior art and evaluating the differences between them.

Part VII.D.2 at pages 22-29, *supra*, is hereby relied upon and incorporated in this argument regarding the second obviousness rejection, as if repeated verbatim in this part. As previously shown, the Examiner finds the claim language "synergistically effective amounts" to describe a "synergistic fungicidal composition" and that the synergistic fungicidal effects "describe the combined activity of said phthalocyanine and fosetyl-Al or phosphorous compound...."

(OA 8.)

The "synergistic" limitation must be considered in the required analysis under 35 U.S.C. § 103 in determining (1) the differences that exist between the prior art and the claimed invention, and (2) whether those differences would be obvious (*e.g.*, predictable, expected) to a person of ordinary skill in the art.

In the present obviousness rejection, the Examiner did not compare the prior art with the claims having the "synergistic" limitation. As shown in connection with the first obviousness

rejection, the M.P.E.P. at § 2143.03 states in no uncertain terms that an Examiner cannot ignore claim limitations in considering the obviousness issue.

The Examiner's explanation for ignoring the "synergistic" limitation in this second rejection is similar to the reasoning the Examiner provided in the first obviousness rejection:

With respect to the term "synergistic" used in the claims to describe the combined activity of said phthalocyanine and fosetyl-Al or phosphorous compound, the Examiner would like to point out that all of the examples in the specification and declarations showing synergism include mancozeb. The Examiner further points out that Applicant does not provide examples showing synergism for a combination comprising only phosphorous acid or fosetyl-Al plus a phthalocyanine lacking the fungicide (mancozeb). The claims are not commensurate in scope with the examples provided in the declarations.

(OA 8-9.)

The Examiner's error in failing to compare the prior art in this rejection with all of the limitations in the claims including the "synergistic" limitation establishes that the Examiner has failed to present a *prima facie* case of obviousness. M.P.E.P. § 2142. On this basis alone, the rejection should be reversed.

The Examiner's failure to consider the "synergistic" limitation in the claims is significant because the "synergistic" limitation establishes a difference between the claimed invention and the combined prior art references. The Examiner acknowledged in the OA that the combination of prior

art references does not disclose the claimed invention based on the synergistic function of phthalocyanine:

The Examiner argues that the combination of references do not disclose that the dye [phthalocyanine] and phosphorous compound yield synergism.

(OA 9)

Had the Examiner considered the claims limited by the "synergistic" language, the patentability of the claims would have been undisputed. Not only does the synergistic limitation establish a difference between the claimed invention and the combined prior art references, that difference would not have been predictable and would not have been expected by a person of ordinary skill in the art. The fungicidal synergist function of the phthalocyanine in the claimed invention would not have been predictable and would not have been expected from the unrelated function of phthalocyanine established in the prior art — that of a colorant. Such a difference in the functions of phthalocyanine, between what was known in the prior art and what is the subject of the claimed invention clearly meets the standard of nonobviousness and patentability set forth in *KSR*.

**3. The Examiner's Asserted Combination
Of References Constitutes Reversible
Error Because It Is Not Motivated
By The Prior Art And Is Not
Consistent With The Compositions
And Methods Sought to Be Combined**

The Examiner provides the following explanation for why a person of ordinary skill in the art would combine the Fenn and Guillino references with the Kato and Nagashima references.

It would have been obvious to one of ordinary skill in the art to add pigment blue 15 to phosphorous acid or fosetyl-Al. One would have been motivated to do this because while phosphorous acid or fosetyl-Al would control/kill the fungus, *Rhizotonia solani*, responsible for causing brown or dead spots in the turfgrass (golf course), the pigment blue 15 would restore the desired green appearance to turfgrass.

.....

...[O]ne having ordinary skill in the art would have been able to determine the optimum amount of phthalocyanine and phosphorous acid. One would have been motivated to do this in order to make a composition that would have been most effective in controlling fungal growth and restoring color without destroying the turfgrass.

(OA 8 ll. 3-8, and 12-15; see also OA 9 ll.8-12.)

In the Examiner's explanation of the motivation to combine these references he ignores several important differences in the objectives, formulations, and applications of the prior art fungicidal compositions (e.g., described in Fenn) compared to the Kato/Nagashima coloring compositions. These differences preclude the Examiner's asserted combination. The teachings of the Kato/Nagashima references also teach away from the invention of the appealed claims.

In this rejection, the Examiner does not merely rely upon the phthalocyanine to impart color to the composition or formulation containing it. Here, the Examiner expressly relies upon the specific formulations described in Kato and Nagashima for affixing or bonding the phthalocyanine to the turfgrass foliar surface to impart a long-lasting color to the grass. The resins in the coloring formulations described in the Kato and Nagashima references are what prevents the colorant from leaving the foliar surface or being washed off by rain. Therefore these resins are a necessary part of the Examiner's "motivations" to achieve improved color for the dead or withered grass and are a necessary part of the rejection.

The formulations of the Kato and Nagashima compositions and the "applying" and affixing the coloring to grass is significantly different from the fungicidal compositions described in Fenn.

The Fenn publication describes fosetyl-Al as a "formulated systemic fungicide." Fenn at p.1:1-4 (Emphasis added). Fenn discusses *in vitro* and some *in vivo* tests. The *in vivo* tests were conducted on seedlings of *Persea indice* by foliar spray or soil drench of "aqueous solutions of fosetyl-Al...or H₃PO₃ (phosphorous acid)." (See, e.g., Fenn p.1:31 to p.2:1-12.) Hence, the fosetyl-Al and phosphorous acid were not applied in a resin emulsion to fix and immobilize the fungicidal agents to the foliage but in an aqueous solution. The presence of a resin

emulsion with the function to fix the fungicide with other ingredients to the turf foliage would not be consistent with "formulated systemic fungicide." (Emphasis added.)

Although not cited in this rejection, the Collins '228 Patent is part of the state of the art and of record in this appeal. The Collins patent explains the systemic mode of action of fostetyl-Al in treating fungus disease in plants. It describes fostetyl-Al (active ingredient in Aliette®) as systemically functioning as a fungicide by necessarily transporting through the plant, between foliage and roots, rather than being fixed or bonded to the surface of foliage:

Fosetyl-Al has the unique feature of being systemically active in both an upward (xylem) and downward (phloem) direction and has enabled new strategies to be used in control of diseases which affect the above ground as well as below ground portions of plants. Thus foliar applications can advantageously combat root diseases, stem/trunk applications can advantageously combat root diseases as well as foliage or fruit diseases, and root, seed or soil applications can advantageously combat diseases of above ground plant portions.

(Collins '228 Patent 1:31-42)

A person of ordinary skill in the art would not have been motivated to include a fungicide of the Fenn reference in the coloring compositions of the Kato/Nagashima references because the Kato/Nagashima compositions require resins for immobilizing and binding components of the coloring composition to the surface of the grass foliage. In contrast, Fenn describes fungicidal phosphorous acid and monoester salts of phosphorous

acid to be a "formulated systemic fungicide." A person of ordinary skill in the art would not have reasonable expectation of success that the systemic fungicide would achieve its effective activity in a Kato/Nagashima composition, which binds and immobilizes its components to foliage. It was reasonable for a person of ordinary skill in the art to believe the systemic fungicidal activity of a phosphorous acid or monoester of phosphorous acid fungicide would be impaired in a Kato/Nagashima composition, particularly where the fungus to be treated is in the root system, e.g., root rot. Therefore, combining the fungicidal phosphorous acid component into a single composition with the colorant/resin would be contrary to the motivation of a person of ordinary skill in the art.

Another reason why a person of ordinary skill in the art would not be motivated to combine a fungicide in a coloring composition of Kato/Nagashima is that Nagashima cautions that the resin that binds the colorant to the turf foliage can interfere with growth of the turfgrass. This would be contrary to a primary objective of fungicide treatment and of the composition and methods of the claimed invention.

Nagashima indicates that if the colorant does not wash off from the grass, it could "adversely effect the germination in the following year by remaining too long." (Nagashima p.3.) A person of ordinary skill in the art would understand from Nagashima's statement that there was a reasonable expectation

that application of the Kato/Nagashima resin/colorant composition would to some extent interfere with the growth of turfgrass for weeks, if not months, after its application. This would at least discourage a person of ordinary skill in the art from adding a fungicidal compound to a Kato/Nagashima coloring composition to achieve a composition to combat fungus, as well as enhance the quality of turfgrass growth.

The compositions and methods of the appealed claims are directed to achieving an enhanced quality of turfgrass growth in view of the claim limitation "enhancing turf quality." The terminology "enhancing turf quality," is a limitation in all of the claims and relates to the quality of the growth of turfgrass after treatment.⁶

Throughout the Mudge '804 Patent specification, the terminology "enhancing turf quality" or "turf quality" refers to improving the health and growth of turfgrass. For example, under the "Background of the Invention" turf quality is directly related to "healthy" turfgrass:

High quality, healthy turfgrass is essential to the golfing industry. Accordingly, there remains a need in the art for fungicidal compositions which enhance turf quality and protect against crown and root rot in turfgrass to provide high quality, healthy turfgrass.

⁶ While "enhancing turf quality" is in the preamble of the claims, it is read as a limitation of the claims because the preamble terminology is needed to clarify or understand an element in the body of these claims. M.P.E.P. § 2111.02 (citing *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1333-34, 68 U.S.P.Q.2d 1154, 1158 (Fed. Cir. 2003); *Ex parte Torney*, Appeal 2008-3666, App. No. 10/122,832 (B.P.A.I. 2008); see also *On Demand Machine Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1343, 78 U.S.P.Q.2d (BNA) 1428, 1436 (Fed. Cir. 2006); *In re Cruciferous Sprout Litig.*, 301 F.3d 1343, 1347, 64 U.S.P.Q.2d (BNA) 1202, 1204 (Fed. Cir. 2002).

(Mudge '804 Patent 1:31-35.)

Also, the Mudge '804 Patent specification describes benefits of the claimed composition and methods for controlling fungus disease and improving turfgrass health and quality of turfgrass growth after treatment. The examples in the Mudge '804 Patent specification refer to separate measurements and ratings for turf quality, turf color, and activity against crown and root rot and brown patch. ('804 Patent 7:30-34; 8:19, Tables.) The specification states: "Turf quality and color were used as an indicator of the health of the bentgrass and the decline associated with crown and root rot." (Id. 8:24-27.) The weekly ratings reflect that the treated turfgrass was growing and that weekly observations could measure changes in the quality of growth of the treated turfgrass.

Enhancing turf quality as used in the appealed claims is clearly distinguishable from the Kato/Nagashima compositions and methods for applying a color coating to grass.

The Kato/Nagashima compositions and methods are intended to be applied to "withered," "dead", or dormant grass, which would not be expected to undergo growth after application of the colorant composition. The choice of such turfgrass to receive the colorant is consistent with the objectives of the compositions to avoid watering or cutting of the colored grass which would eliminate the coloring.

The choice of Kato/Nagashima to apply the colorant compositions to dead, dormant, or withered turf teaches away from the invention of the appealed claims that seek to enhance the quality of new growth of turfgrass after treatment.

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant.

In re Gurley, 27 F.3d 551, 553, 31 U.S.P.Q.2d (BNA) 1130, 1131 (Fed. Cir. 1994). Here, the Kato/Nagashima publications teach a person of ordinary skill in the art away from adding a fungicide of the present claims to a coloring composition designed to affix the coloring composition to foliage of the turf.

Therefore, in addition to failing to present a *prima facie* case of obviousness, the Examiner made several erroneous factual findings to justify the combining of the references. These additional errors provide additional grounds for reversing this rejection.

VIII. CONCLUSION

For the reasons set forth above, this Honorable Board should reverse both of the rejections set forth in the OA.

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Respectfully submitted,

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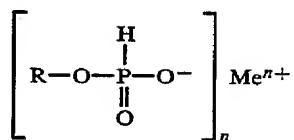
APPENDIX A — CLAIMS ON APPEAL

Listed below are all of the claims on appeal, namely, claims 1-8, 10-17, 20-35, and 37-38. All of the claims are finally rejected. The claims are reproduced in accordance with 37 C.F.R. § 1.73(d), where all changes relative to the underlying U.S. Patent No. 5,599,804 are shown by brackets and underlining:

1. (Twice amended) A method of combatting fungi and enhancing turf quality in turfgrass which comprises applying to said turfgrass synergistic fungicidally effective amounts of:

(a) a first active agent selected from the group consisting of 1 part by weight of

(i) a monoester salt of a phosphorous acid of Formula (I):



wherein:

R is an alkyl radical having 2 to 4 carbon atoms,

Me is an alkali metal, alkaline earth, or aluminum atom, and

n is a whole number from 1 to 3 equal to the valence of Me; and

(ii) phosphorous acid or an alkali or alkali earth metal salt thereof; and

(b) from 0.01 to 0.1 parts by weight of a phthalocyanine compound,

wherein said method does not include the application of an ethylenebisdithiocarbamate contact fungicide.

2. (Original) The method according to claim 1, wherein said step of applying

comprises applying 1 part by weight of said first active agent, and 0.05 parts by weight of said phthalocyanine compound.

3. (Original) The method according to claim 1, wherein said phthalocyanine compound is Pigment Blue 15.

4. (Original) The method according to claim 1, wherein said phthalocyanine compound is not Pigment Blue 15.

5. (Original) The method according to claim 1, wherein said step of applying is carried out by applying said first active agent and said phthalocyanine compound to said turfgrass together in a common carrier.

6. (Original) The method according to claim 1, wherein said turfgrass is bentgrass.

7. (Original) The method according to claim 1, wherein said turfgrass is bermudagrass.

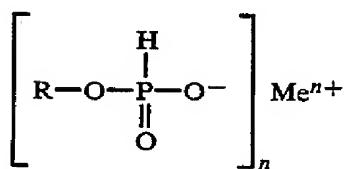
8. (Original) The method according to claim 1, wherein said first active agent is applied to said turfgrass in an amount of from about 8 to about 16 pounds active ingredient per acre, and said phthalocyanine compound is applied to said turfgrass in an amount of from about 0.2 to about 0.8 pounds per acre.

9. (canceled)

10. (Thrice amended) A fungicidal composition [tier] for enhancing turf quality wherein the active material [which comprises] present in synergistic fungicidally effective amounts consists essentially of [of an active material comprising]:

(a) 1 part by weight of a first active agent selected from the group consisting of

(i) a monoester salt of a phosphorous acid of Formula (I):



wherein:

R is an alkyl radical having 2 to 4 carbon atoms,

Me is an alkali metal, alkaline earth, or aluminum atom, and

n is a whole number from 1 to 3 equal to the valence of Me; and

(ii) phosphorous acid or an alkali or alkali earth metal salt thereof; and

(b) from 0.01 to 0.1 parts by weight of a phthalocyanine compound.

wherein the composition does not include an ethylenebisdithiocarbamate contact fungicide.

11. (Original) The composition according to claim 10, wherein said first active agent is said monoester salt of phosphorous acid, and R is selected from the group consisting of ethyl, propyl, and butyl.

12. (Original) The composition according to claim 10, wherein said first active agent is said monoester salt of phosphorous acid, and Me is selected from the group consisting of aluminum, calcium, magnesium, and sodium.

13. (Original) The composition according to claim 10, wherein said first active agent is said monoester salt of phosphorous acid, and said compound of Formula (I) is selected from the group consisting of calcium ethyl phosphite, sodium ethyl phosphite, aluminum ethyl phosphite, magnesium isopropyl phosphite, calcium isopropyl phosphite, aluminum isopropyl phosphite, magnesium ethyl phosphite, magnesium isobutyl phosphite, magnesium sec-butyl phosphite, calcium isobutyl phosphite, aluminum N-butyl phosphite, aluminum sec-butyl phosphite, and aluminum isobutyl phosphite.

14. (Original) The composition according to claim 10, wherein said first active agent is said monoester of phosphorous acid, and said compound of Formula (I) is aluminum ethyl phosphite.

15. (Original) The composition according to claim 10, wherein said phthalocyanine compound is selected from the group consisting of Pigment Blue 16, Vat Blue 29, Pigment Blue 15, Heliogen Green GG. Ingrain Blue 14, Ingrain Blue 5, Ingrain Blue 1, Pigment Green 37, and Pigment Green 7.

16. (Original) The composition according to claim 10, wherein said phthalocyanine compound is Pigment Blue 15.

17. (Original) The composition according to claim 14, wherein said phthalocyanine compound is not Pigment Blue 15.

18. (canceled)

19. (canceled)

20. (Original) The composition according to claim 10, wherein said composition is an aqueous suspension.

21. (Original) The composition according to claim 10, wherein said composition is a wettable powder.

22. (Original) The method according to claim 1, wherein said first active agent comprises ethyl aluminum phosphite and said phthalocyanine compound comprises Pigment Blue 15.

23. (Original) The composition according to claim 10, wherein said first active agent comprises ethyl aluminum phosphite and said phthalocyanine compound comprises Pigment Blue 15.

24. (New - Amended) A method of combatting fungi and enhancing turf quality in turfgrass which comprises applying to said turfgrass synergistic fungicidally effective amounts of:

(a) 1 part by weight of a first active agent selected from the group consisting of phosphorous acid or an alkali or alkali earth metal salt thereof; and

(b) from 0.01 to 0.1 parts by weight of a phthalocyanine compound,

wherein said method does not include the application of an ethylenebisdithiocarbamate contact fungicide.

25. (New) The method according to claim 24, wherein said step of applying comprises applying 1 part by weight of said first active agent, and 0.05 parts by weight of said phthalocyanine compound.

26. (New) The method according claim 24, wherein said phthalocyanine compound is Pigment Blue 15.

27. (New) The method according to claim 24, wherein said phthalocyanine compound is not Pigment Blue 15.

28. (New) The method according to claim 24. wherein said step of applying is carried out by applying said first active agent and said phthalocyanine compound to said turfgrass together in a common carrier.

29. (New) The method according to claim 24, wherein said turfgrass is bent grass.

30. (New) The method according to claim 24, wherein said turfgrass is bermudagrass.

31. (New) The method according to claim 24, wherein said first active agent is applied to said turfgrass in an amount of from about 8 to about 16 pounds active ingredient per acre, and said phthalocyanine compound is applied to said turfgrass in an amount of from about 0.2 to about 0.8 pounds per acre.

32. (New- Amended) A fungicidal composition for enhancing turf quality wherein the active material present in synergistic fungicidally effective amounts consists essentially of:

(a) 1 part by weight of a first active agent selected from the group consisting of phosphorous acid or an alkali or alkali earth metal salt thereof; and

(b) from 0.01 to 0.1 parts by weight of a phthalocyanine compound, and wherein the composition does not include an ethylenebisdithiocarbamate contact fungicide.

33. (New) The composition according to claim 32, wherein said phthalocyanine compound is selected from the group consisting of Pigment Blue 16, Vat Blue 29. Pigment Blue 15, Heliogen Green GG. Ingrain Blue 14, Ingrain Blue 5, Ingrain Blue 1, Pigment Green 37, and Pigment Green 7.

34. (New) The composition according to claim 32, wherein said phthalocyanine compound is Pigment Blue 15.

35. (New) The composition according to claim 32, wherein said phthalocyanine compound is not Pigment Blue 15.

36. (canceled)

37. (New) The composition according to claim 32, wherein said composition is an aqueous suspension.

38. (New) The composition according to claim 32, wherein said composition is a wettable power.

APPENDIX B — EVIDENCE APPENDIX

None.

APPENDIX C — RELATED PROCEEDINGS

The only lawsuit or legal proceeding involving this application or the Mudge '804 Patent is a lawsuit that was filed on October 28, 2009, by Bayer CropScience LP, in the United States District Court for the Middle District of North Carolina, asserting infringement of claim 19 of United States Patent No. 5,599,804 ("804 patent"). The caption for the case is: *Bayer CropScience LP. v. Tessenderlo Kerley, Inc. and Phoenix Environmental Care, LLC* and it has been given the civil action number: 1:09-cv-833.